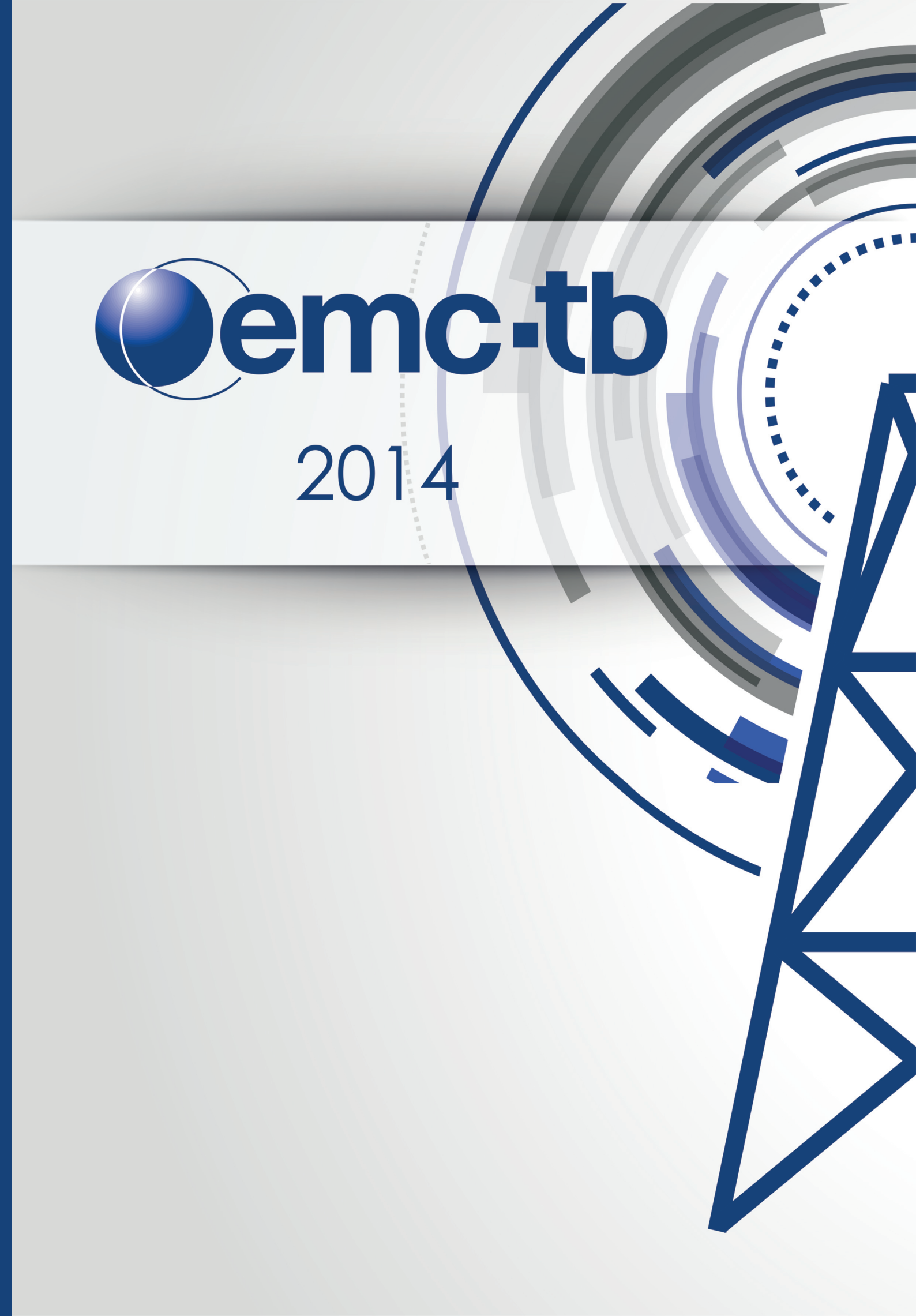
emc-tb
2014

EDITORIAL

After having successfully taken over SYAC, which became **SYAC•TB** in November 2012, TECHBOARD has integrated EMC, a Modena based company founded in 1973 and specialized in the design and construction of base stations and radio terminals for fixed and mobile use.

To EMC we have added the initials **TB** as we did for SYAC, to give birth to a new division that will offer important guarantees in terms of continuity and innovation Made in Italy, from the research and development to the production and testing of the finished products.

We, therefore, are proud to present this first **EMC•TB** catalog: quality products and unique solutions particularly suitable for *alternative communication* needs, that is to say applications where standard telecommunication systems are unreliable or altogether unavailable.

We hope you enjoy the reading and stay at your disposal for any further information you may require.

Best regards,

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TECHBOARD COMMUNICATIONS DIVISION

EMC▪TB, ALTERNATIVE COMMUNICATION

EMC▪TB, the newborn TECHBOARD COMMUNICATIONS DIVISION, has been working in the professional telecommunications field for more than 30 years. The core business is focused on the design, development and production of professional radio equipment, specializing in repeater stations and transceiver equipment for both fixed and mobile use. Thanks to its in-depth knowledge, in-house development and complete control of both software and hardware, **EMC▪TB** is able to offer flexible, tailor-made solutions that are particularly suitable for ***Alternative Communication*** needs, that is to say applications where standard telecommunication systems are unreliable or altogether unavailable.

EMC▪TB, COMMUNICATIONS PARTNER

EMC▪TB highly qualified team supports partners and end-users through the whole pre and post sales process, from R&D to production, testing, installation and follow-up. For those who have to face the difficult world of telecommunications for the first time, **EMC▪TB** offers a service taking care of all documentation necessary to obtain radio frequency licenses.

EMC▪TB, SOLUTIONS FOR EMERGENCY AND CUSTOMIZED SYNCHRONIZED / ISOFREQUENTIAL NETWORKS

The **EMC▪TB** high quality and reliable solutions are able to satisfy the most demanding needs with regards to ***Emergency*** and ***Customized Synchronized and Isofrequential Networks***: **EMC▪TB** develops networks which relay radio signals over covered widespread areas, insuring a homogeneous coverage of the radio signal. Starting from a single repeater station, **EMC▪TB** is capable of expanding to an entire network system, without wasting resources.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

Since 2011, **EMC▪TB** has been a member of the DMR Association.
www.dmrassociation.org

LANDER SERIES

EMC▪TB MOBILE TERMINAL | **ANALOG & DMR-TDMA STANDARD**

TECHNICAL CHARACTERISTICS

Frequency band : VH/L 68-88 MHz, VHF/H 146-174 MHz

Dual Mode analog / Digital (DMR) radio

DMR ETSI Standard Compliant

RF power 25 W programmable, reducible to 5 W in 1W steps

Up to 512 programmable channels

Analogue selective calls (up to 24 tones)

Digital selective call FFSK standard ETSI 300-320

Digital FFSK and analogue protocol with parallel functioning

Transparent RS232 in/out serial port for data transmission

Built–in 1200/2400 byte/s FFSK modem

IP54 front protection

Wide LCD display 128 x 81 in FSTN technology

User–friendly keys differentiated by colours and shapes

27 programmable keys

LEDs, colours programmable according to activated functions

Automatic sensors for display/keypad back–lighting

Back–lit multifunctional knob for rapid menu selection

Transmission of pre–coded and timed messages.

Metal die–cast housing

DMR DIGITAL MOBILE RADIO ASSOCIATION

OPTIONAL FUNCTIONS

GPS module password activable

GSM/GPRS/EDGE module

USB port for hard disk connection and ***radio configuration temporary changes***

GPS USB GPRS

INCLUDED IN THE PACKAGE

External loudspeaker
Power cable
Hand held microphone
Mounting bracket and mount kit
User manual

OPTIONAL ACCESSORIES

Front panel separation kit
GPS Antenna
Handset for Lander - back or front panel connection

CODE	DESCRIPTION
9DD1RVL0	Lander DMR-V070 mobile terminal (VHF/L 68 - 88 MHz)
9DD1RVH0	Lander DMR-V160 mobile terminal (VHF/H 146 -174 MHz)
9DD1RUH0	Lander-DMR-U450 mobile terminal (UHF 400 -470 MHz) Programmation included

STANDARD PACKAGE

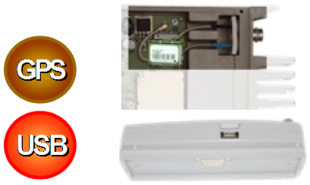
9WW4ALT0	External loudspeaker
9WW1CVA0	Power cable
9LD2MIC0	Hand held microphone
FSBL5ARA	5A fuse
9LD1STF0	Mounting bracket
9WW2KFS0	Mounting bracket swivel kit

LANDER SERIES

EMC•TB MOBILE TERMINAL | **ANALOG & DMR-TDMA STANDARD**

OPTIONAL SOFTWARE FUNCTIONS FOR LANDER DMR MOBILE TERMINAL

CODE	DESCRIPTION
9SW1CAG0	GPS built-in receiver activable via software.
9LD1KUS0	USB activation function supplied with software and USB key



OPTIONAL ACCESSORIES AND FUNCTIONS FOR LANDER DMR TERMINAL

CODE	DESCRIPTION
9LD1KED0	Built–in cellular GSM/GPRS/EDGE module (SIM CARD not supplied)
9LD1FRN0	Lander front

FIX BASE STATION CONFIGURATION - LANDER

CODE	DESCRIPTION
9WI5ALM0	Desktop power supplier (input 220V 50 Hz) with electronic switch from power supply to battery back-up (circuit to maintain battery charge, built-in loudspeaker). Battery non included.
9LD3MIC0	Desktop microphone for Lander - front panel connection

DATA TRASMISSION CONFIGURATION (front panel excluded)

CODE	DESCRIPTION
9DD1CVL0	Datalander DMR-V070 (VHF/L 68 - 88 MHz)
9DD1CVH0	Datalander DMR-V160 (VHF/H 146 -174 MHz)
9DD1CUH0	Datalander DMR-U450 (UHF 400 -470 MHz)

STANDARD PACKAGE

CODE	DESCRIPTION
9LD1STF0	Mounting bracket
9WW1CVA0	Power cable
9WW2KFS0	Mounting bracket swivel kit

LANDER SERIES

EMC-TB MOBILE TERMINAL | **ANALOG & DMR-TDMA STANDARD**

LANDER/ROMULUS DMR MOBILE ACCESSORIES

CODE	DESCRIPTION
9LD2MIC0	Hand held microphone for Lander/Romulus
9WW4ALT0	Lander/Romulus External loudspeaker
9WW1CVA0	Lander/Romulus power cable
9LD1IPR0	Lander programming interface
9LD1STF0	Lander/Romulus mounting bracket (U)
9WW2KFS0	Mounting bracket Lander/Romulus swivel kit (U)
9MTATS80	Lander/Romulus loudspeaker for external use
9LD1KPL0	DIN extractable mounting bracket for Lander/ Romulus. Supplied with mounting kit.
9RM1KSF0	Lander/Romulus front support
9LD1CVP0	Lander/Romulus 5m front separation cable ***(1 RADIO UNIT ↔ 1 FRONT)***
9LD3CVP0	Lander/Romulus 5m front separation cable *FOR MANAGING TWO RADIO UNIT WITH AN ONLY FRONT* ***(1 FRONT ↔ 2 RADIO UNIT)***
9LD4CVP0	Lander/Romulus 5m front separation cable *FOR MANAGING ONE RADIO UNIT WITH TWO FRONT* ***(2 FRONT ↔ 1 RADIO UNIT)***
9LD1MTL0	Handset for Lander/Romulus - front-panel connection (not amplified) (in place of hand held microphone) with RJ-45 connector
9LD2MTL0	Handset for Lander/Romulus - back connection (not amplified) with 15p connector
9LD3MIC0	Desktop microphone for Lander/Romulus - front panel connection
9WW1SPV0	Desktop microphone for Lander/Romulus - back connection
9WI5ALM0	Desktop power supplier (input 220V 50 Hz) with electronic switch from power supply to battery back-up (circuit to maintain battery charge, built-in loudspeaker).
9RM1KEY0	ROMULUS keyboard
9LD1KEY1	LANDER keyboard

9LD2MIC0

9WW4ALT0

9WW1CVA0

9LD1IPR0

9LD1STF0

9WW2KFS0

9MTATS80

9LD1KPL0

9RM1KSF0

9LD1MTL0

9LD2MTL0

9LD3MIC0

9WW1SPV0

9WI5ALM0

LANDER/ROMULUS DMR MOBILE ANTENNAS

CODE	DESCRIPTION
ANTMFIBGPGSUM	Dual-band antenna GPS/GPRS without coax. cable (N.1 CVCXTNCMSMRM4 and N.1 CVCXFMEFSMAM4 to order separately)
CVCXTNCMSMRM4	4 mt. coax RG58 cable TNC-M SMR-M
CVCXFMEFSMAM4	4 mt. coax RG58 cable FME-F SMA-M
ANTGPS512_4/3	GPS antenna with 4m cable and connector

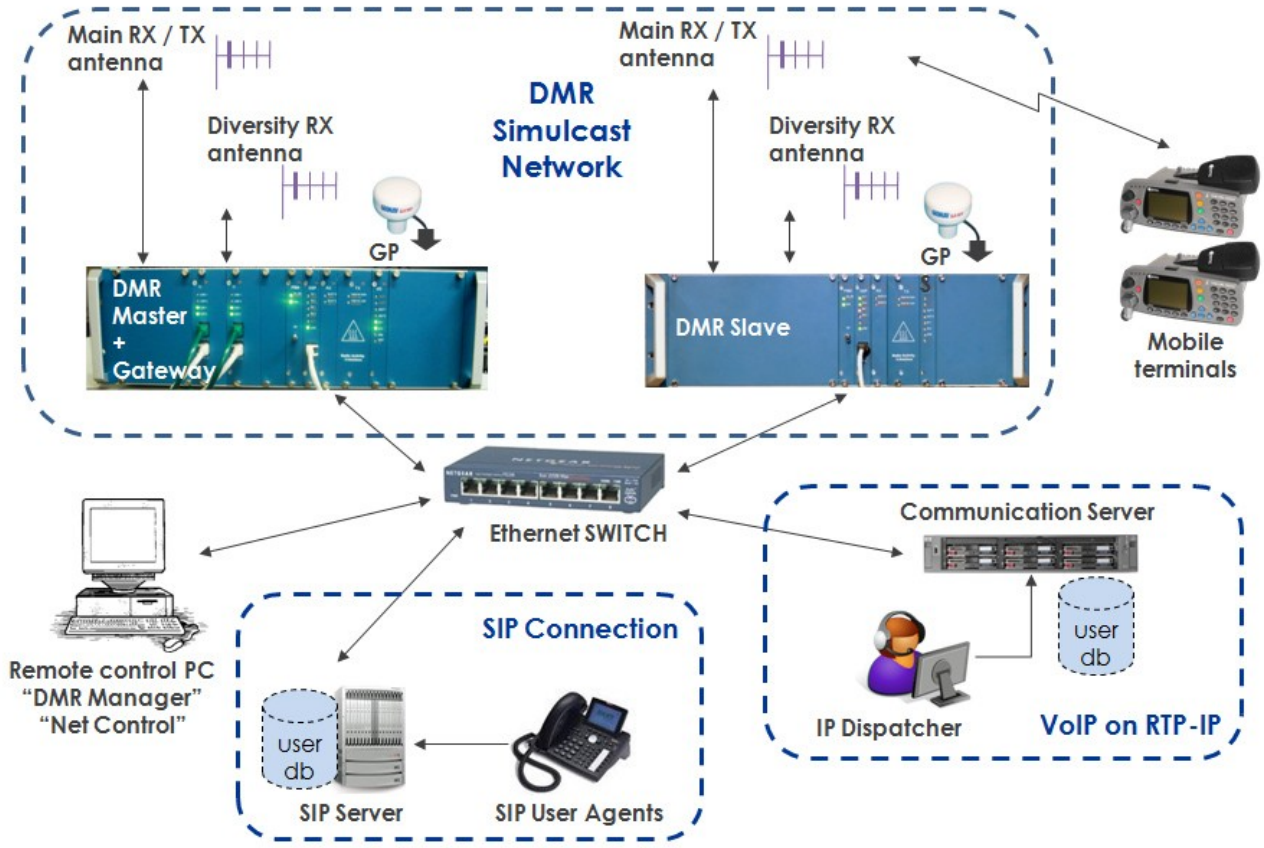
ANTMFI-BGPGSUM

ANTGPS512_4/3

RA SERIES

EMC•TB RA | **ANALOG & DMR-TDMA STANDARD**

EMC•TB RA SOLUTIONS



STANDARD BUILDING BLOCKS STRUCTURE

FREQUENCY BAND	MHZ	CODE
UHF-9	880-930	RA-900
UHF-M/H	407-470	RA-450
UHF-L	380-410	RA-450
VHF-M	145-174	RA-160
VHF-L	68-88	RA-080

POWER SUPPLY	POWER
From battery 13.5V negative ground	75 W
DC-DC 10/18V floating ground	75 W
DC-DC 19/36V floating ground	75 W
DC-DC 36/72V floating ground	75 W
Wide DC-DC 19/56V floating ground	75 W

BRANCHING
None (external)
Internal TX/RX switch
Internal duplexer

RECEIVER TYPE
Single
Main+diversity

CHANNEL SPACING	KHZ
Standard	12:05
Wide 1	20:00
Wide 2	25:00:00
Double	12.5 + 20/25.0

RA SERIES

EMC▪TB RA | **ANALOG & DMR-TDMA STANDARD**

DUAL MODE ANALOG/DMR BASE STATION

OPTIONS INCLUDED AND GENERAL CHARACTERISTICS	
operation	radio base station duplex/semiduplex with "Dual Mode" function for completely automatic working mode according both analog and DMR – TDMA standard
channel bandwidth	12.5KHz
number of channels	199
size	equipment is housed into a 19" rack, 3UT high without external cabinet
power supply	13,5 Vdc supply with negative ground
RF power	1 to 25W programmable
IP connector	RJ45 Ethernet 10/100
functions and algorithms	PL/TPL codec, IP remote control interface, DMR Alarms to terminals

CODE	DESCRIPTION
RA-450	TRX base duplex/semiduplex (without duplexer)
RA-160	TRX base duplex/semiduplex (without duplexer)
RA-080	TRX base duplex/semiduplex (without duplexer)

OPTIONS (not included)

Power supply with DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground

Extra optional VHF or UHF receiver module equipped with Diversity RX

Double channelization 12.5/20/25 KHz

6 cavity duplexer in VHF or UHF band, housed inside the 19" rack

Diversity receiver cavity filter in VHF or UHF band, housed inside the 19" rack

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs), through equipment ETH port

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs) and to remotely control the complete stations, through internal embedded GSM/GPRS modem (besides ETH port), external antenna included (SIM excluded)

Kit for 1+1 solution with automatic TXs selector and paralleled audio/data port

SW and HW upgrade to perform a Simulcast "IP LINKED" base station

IP Audio Gateway RA TI-**01**: 1 line 4W+E&M console **or** automatic phone bridge application

IP Audio Gateway RA TI-**02**: 2 line 4W+E&M console **or** automatic phone bridge application

Radio equipments remote control SW license (PC excluded). License is needed to connect and remotely manage the stations. **License is intended for single installation.**

Remote control SW license extension to new radio equipments

Factory parameters setup, technical documentation, and programming SW in English language on CD-ROM support

RA SERIES

EMC▪TB RA | **ANALOG & DMR-TDMA STANDARD**

ANALOG SIMULCAST BASE STATIONS "IP LINKED"

OPTIONS INCLUDED AND GENERAL CHARACTERISTICS	
operation	radio base station duplex/semiduplex analog only
channel bandwidth	12.5KHz
number of channels	199
size	equipment is housed into a 19" rack, 3UT high without external cabinet
power supply	13,5 Vdc supply with negative ground
RF power	1 to 25W programmable
IP connector	RJ45 Ethernet 10/100
GPS receiver	I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs) and to remotely control the complete stations, through internal embedded GSM/GPRS modem (besides ETH port), external antenna included (SIM excluded)
functions and algorithms	PL/TPL codec, IP remote control interface, DMR Alarms to terminals; algorithms to operate in a analog/digital **SIMULCAST** mode (equalizer, delay compensation, synchronism recovery, voter, …)

CODE	DESCRIPTION
RA-450	Simulcast analog "IP LINKED" - Slave
RA-160	Simulcast analog "IP LINKED" - Slave
RA-080	Simulcast analog "IP LINKED" - Slave
RA-450	Simulcast analog "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves
RA-160	Simulcast analog "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves
RA-080	Simulcast analog "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves

OPTIONS (not included)

Power supply with DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground

Extra optional VHF or UHF receiver module equipped with Diversity RX

Double channelization 12.5/20/25 KHz

6 cavity duplexer in VHF or UHF band, housed inside the 19" rack

Diversity receiver cavity filter in VHF or UHF band, housed inside the 19" rack

SW upgrading to perform automatic analog/DMR functioning

SW to upgrade a Slave station to an ALIAS MASTER – STATION "IP LINKED" able to manage up to 4 Sub-Master/Slave stations

IP Audio Gateway RA TI-**01**: 1 line 4W+E&M console **or** automatic phone bridge application

IP Audio Gateway RA TI-**02**: 2 line 4W+E&M console **or/and** automatic phone bridge app.

Radio equipments remote control SW license (PC excluded). License is needed to connect and remotely manage the stations. **License is intended for single installation.**

Remote control SW license extension to new radio equipments

Factory parameters setup, technical documentation, and programming SW in English language on CD-ROM support

RA SERIES

EMC▪TB RA | **ANALOG & DMR-TDMA STANDARD**

ANALOG SIMULCAST BASE STATIONS "UHF LINKED"

OPTIONS INCLUDED AND GENERAL CHARACTERISTICS	
operation	radio base station duplex/semiduplex analog only
channel bandwidth	12.5KHz
number of channels	199
size	equipment is housed into a 19" rack, 3UT high without external cabinet
power supply	13,5 Vdc supply with negative ground
RF power	1 to 25W programmable
IP connector	RJ45 Ethernet 10/100
functions and algo-rithms	PL/TPL codec, IP remote control interface, DMR Alarms to terminals; algorithms to operate in a analog/digital SIMULCAST mode (equalizer, delay compensation, synchronism recovery, voter, ...)

CODE	DESCRIPTION
RA-450 + RA-450	Simulcast RF linked slave
RA-450 + RA-160	Simulcast RF linked slave
RA-450 + RA-080	Simulcast RF linked slave
RA-450 + RA-450	Simulcast RF linked Master Rid 4 RX link
RA-450 + RA-160	Simulcast RF linked Master Rid 4 RX link
RA-450 + RA-080	Simulcast RF linked Master Rid 4 RX link

OPTIONS (not included)

Power supply with DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground

Extra optional VHF or UHF receiver module equipped with Diversity RX.

Double channelization 12.5/20/25 KHz

6 cavity duplexer in VHF or UHF band, housed inside the 19" rack

Diversity receiver cavity filter in VHF or UHF band, housed inside the 19" rack

SW upgrading to perform automatic analog/DMR functioning

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarms outputs), through equipment ETH port

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs) and to remotely control the complete stations, through internal embedded GSM/GPRS modem (besides ETH port), external antenna included (SIM excluded)

IP Audio Gateway RA TI-01: 1 line 4W+E&M console or automatic phone bridge application

IP Audio Gateway RA TI-02: 2 line 4W+E&M console or/and automatic phone bridge app.

Radio equipments remote control SW license (PC excluded). License is needed to connect and remotely manage the stations. License is intended for single installation.

Remote control SW license extension to new radio equipments

Factory parameters setup, technical documentation, and programming SW in English language on CD-ROM support

RA SERIES

EMC▪TB RA | **ANALOG & DMR-TDMA STANDARD**

DMR SIMULCAST BASE STATIONS "IP LINKED"

OPTIONS INCLUDED AND GENERAL CHARACTERISTICS	
operation	radio base station duplex/semiduplex with "Dual Mode" function for completely automatic working mode according both analog and DMR – TDMA standard
channel bandwidth	12.5KHz
number of channels	199
size	equipment is housed into a 19" rack, 3UT high without external cabinet
power supply	13,5 Vdc supply with negative ground
RF power	1 to 25W programmable
IP connector	RJ45 Ethernet 10/100
GPS receiver	I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs) and to remotely control the complete stations, through internal embedded GSM/GPRS modem (besides ETH port), external antenna included (SIM excluded)
functions and algorithms	PL/TPL codec, IP remote control interface, DMR Alarms to terminals; algorithms to operate in a analog/digital SIMULCAST mode (equalizer, delay compensation, synchronism recovery, voter, …)

CODE	DESCRIPTION
RA-450	Simulcast DMR "IP LINKED" – Slave
RA-160	Simulcast DMR "IP LINKED" – Slave
RA-080	Simulcast DMR "IP LINKED" – Slave
RA-450	Simulcast DMR "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves
RA-160	Simulcast DMR "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves
RA-080	Simulcast DMR "IP LINKED" – Master/Alias Master/Sub Master up to 4 Slaves

OPTIONS (not included)

Power supply with DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground

Extra optional VHF or UHF receiver module equipped with Diversity RX

Double channelization 12.5/20/25 KHz

6 cavity duplexer in VHF or UHF band, housed inside the 19" rack.

Diversity receiver cavity filter in VHF or UHF band, housed inside the 19" rack

SW to upgrade a Slave station to an ALIAS MASTER – STATION "IP LINKED" able to manage up to 4 Sub-Master/Slave stations

IP Audio Gateway RA TI-01: 1 line 4W+E&M console or automatic phone bridge application

IP Audio Gateway RA TI-02: 2 line 4W+E&M console or/and automatic phone bridge app.

Radio equipments remote control SW license (PC excluded). License is needed to connect and remotely manage the stations. **License is intended for single installation.**

Remote control SW license extension to new radio equipments

Factory parameters setup, technical documentation, and programming SW in English language on CD-ROM support

RA SERIES

EMC▪TB RA | **ANALOG & DMR-TDMA STANDARD**

DMR SIMULCAST BASE STATIONS "UHF LINKED"

OPTIONS INCLUDED AND GENERAL CHARACTERISTICS	
operation	radio base station duplex/semiduplex with "Dual Mode" function for completely automatic working mode according both analog and DMR – TDMA standard
channel bandwidth	12.5KHz
number of channels	199
size	equipment is housed into a 19" rack, 3UT high without external cabinet
power supply	13,5 Vdc supply with negative ground
RF power	1 to 25W programmable
IP connector	RJ45 Ethernet 10/100
functions and algo-rithms	PL/TPL codec, IP remote control interface, DMR Alarms to terminals; algorithms to operate in a analog/digital SIMULCAST mode (equalizer, delay compensation, synchronism recovery, voter, …)

CODE	DESCRIPTION
RA-450 + RA-450	Simulcast RF linked slave
RA-450 + RA-160	Simulcast RF linked slave
RA-450 + RA-080	Simulcast RF linked slave
RA-450 + RA-450	Simulcast RF linked Master for 4 Slaves with broadcast transceiver
RA-450 + RA-160	Simulcast RF linked Master for 4 Slaves with broadcast transceiver
RA-450 + RA-080	Simulcast RF linked Master for 4 Slaves with broadcast transceiver

OPTIONS (not included)

Power supply with DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground

Extra optional VHF or UHF receiver module equipped with Diversity RX.

Double channelization 12.5/20/25 KHz

6 cavity duplexer in VHF or UHF band, housed inside the 19" rack

Diversity receiver cavity filter in VHF or UHF band, housed inside the 19" rack

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarms outputs), through equipment ETH port

I/O module to remotely control local commands and alarms (2 ON/OFF type opto-isolated input, 2 analog inputs, 2 relay type outputs, 2 status alarm outputs) and to remotely control the complete stations, through internal embedded GSM/ GPRS modem (besides ETH port), external antenna included (SIM excluded)

IP Audio Gateway RA TI-01: 1 line 4W+E&M console or automatic phone bridge application

IP Audio Gateway RA TI-02: 2 line 4W+E&M console or/and automatic phone bridge app.

Radio equipments remote control SW license (PC excluded). License is needed to connect and remotely manage the stations. **License is intended for single installation.**

Remote control SW license extension to new radio equipments

Factory parameters setup, technical documentation, and programming SW in English language on CD-ROM support

RA SERIES

EMC•TB RA | **ANALOG & DMR-TDMA STANDARD**

AUDIO GATEWAY

CODE	DESCRIPTION
RA-TI-01	Standalone IP Audio gateway with 1 line 4W+E&M for analog console or with automatic phone bridge interface
RA-TI-02	Standalone IP Audio gateway with 2 lines 4W+E&M for analog consoles or for automatic phone bridge interface

MODEMS

CODE	DESCRIPTION
RA-MD1	Powerful and rugged modem with IP services V.34 2/4 wire for LAN extension on leased lines. 1 Ethernet port+1 Serial Port RS232
RA-MD1-O	Powerful and rugged modem with IP services V.34 2/4 wire for LAN extension on leased lines. Internal switch on 1 Ethernet port (copper) +1 Ethernet port (fibre optical)

SPARE PARTS

DESCRIPTION
Spare part RX for RA-450 or RA-160
Spare part RX for RA-450 or RA-160 equipped with Diversity
Spare part TX for RA-450 or RA-160
Spare part RX for RA-080
Spare part RX for RA-080 equipped with Diversity
Spare part TX for RA-080
Spare part DSP for RA-450 or RA-160 or RA-080
Spare part Power Supply Unit 13Vcc negative ground
Spare part Power Supply Unit DC/DC 13.8 Vcc or 26Vcc or 48Vcc floating ground
Spare part I/O module without GPS/GSM
Spare part I/O module with GPS/GSM
Spare part Audio Gateway RA-TI-01 for 1 line
Spare part Audio Gateway RA-TI-02 for 2 lines
Other spare parts on request

ADDITIONAL SERVICES

TRAINING DESCRIPTION
Factory training course (in Italy, English language available). The course includes Power Point theory presentations, practical activities on Factory's hardware and instrumentations. We suggest a training course of 2 days for a maximum of 5 people, to acquire the know-how on the mobile radio network and its parts

REMOTE ASSISTANCE DESCRIPTION
Remote Assistance from Factory through Internet IP connection. This service is available from 9:00 AM to 6:00 PM (Italian timezone) on 5 days/week, excluding holidays. The service includes e-mail/phone help desk and remote connection directly on the radio network for specific assistance requests. Price is intended for 12 months.

REPLIER SERIES

EMC▪TB RADIO BASE STATION | **ANALOG STANDARD**

TECHNICAL CHARACTERISTICS
Frequency ranges: 146 ÷ 174MHz, 400 ÷ 470 MHz
Programmable canalization: 12,5 or 25 KHz
Output power: 25 watt (5 ÷ 25 W programmable)
256 programmable channels
Independent management of modules
Antenna impedance: 50 ohm
Programmable via PC and dedicated EMC▪TB SW
Dedicated programming for each module
INCLUDED IN THE PACKAGE
Handheld microphone
User guide
OPTIONAL FUNCTIONS
Remote control

AVAILABLE IN 2 VERSIONS WITH DIFFERENT POWER SUPPLY

- SINGLE POWER SUPPLY 12 VDC (negative ground)
- 12 VDC (negative ground)
  220 VAC (with overtension protection through gas discharge)
  ± 24 ÷ ±48 VDC (galvanically isolated from ground

REPLIER VHF

DESCRIPTION	
Radio Base Station - Replier DPA-VH: frequency VHF 146 ÷ 174 MHz	
CODE	**ACCESSORIES INCLUDED**
9RP1CVB0	Replier battery cable complete with 4-way connector
CVRM-FO6M2	Complete network cable - Schuko plug standard CEE 7/7
9RP1MIC0	Replier handheld microphone
9RP1KFB0	Replier fuses kit S.B.R.
9RP1CVD0	Replier cable Vin 12V DC S.B.R.
9RP1CXD0	Replier coax cable RG142 BNC/M SMA-M
CODE	**STANDARD MODULES COMPOSITION**
9RP1XSB0	Base station rack mounting chassis with AC/DC converter
9RP1MCT1	DC DC converter module
9RP4XSB0	Base station rack mounting chassis
9RP1MGS1	Module management and services with 4W E+D
9RP1MRH0	Module receiver VHF
9RP1MTH0	Module transmitter VHF
9RP1MDV0	Module filter duplexer VHF/H - 4C

REPLIER UHF

DESCRIPTION	
Radio Base Station - Replier DPA-UH : frequency UHF 400÷ 470 MHz	
CODE	**ACCESSORIES INCLUDED**
9RP1CVB0	Replier battery cable complete with 4-way connector
CVRM-FO6M2	Complete network cable - Schuko plug standard CEE 7/7
9RP1MIC0	Replier handheld microphone
9RP1KFB0	Replier fuses kit S.B.R.
9RP1CVD0	Replier cable Vin 12V DC S.B.R.
9RP1CXD0	Replier coax cable RG142 BNC/M SMA-M
CODE	**STANDARD MODULES COMPOSITION**
9RP1XSB0	Base station rack mounting chassis with AC/DC converter
9RP1MCT1	DC DC converter module
9RP4XSB0	Base station rack mounting chassis
9RP1MGS1	Module management and services with 4W E+D
9RP1MRU0	Module receiver UHF
9RP1MTU0	Module transmitter UHF
9RP2MDU0	Module filter duplexer UHF - 4C 10M

REPLIER SERIES

EMC-TB RADIO BASE STATION | **ANALOG STANDARD**

SRB REPLIER PROGRAMMING

CODE	DESCRIPTION
9RP1IPR1	REPLIER programming interface

REPLIER MODULES PARAMETERS SETTING KIT

CODE	DESCRIPTION
9WW5FRN1 9RP1IFR0	Ward front plate with connexion cable to REPLIER modules. Used to change and set the main parameters (channel, power, squelch threshold, ...)

INTERFACE TO CHECK SRB REPLIER MODULES

CODE	DESCRIPTION
9RP1MIS0	Interface extension used to check the REPLIER modules extracted from the rack mounting chassis (module + cable)

TECHBOARD COMMUNICATIONS DIVISION

EMC▪TB CATALOG VERSION: 2014
EMC▪TB CATALOG VALIDITY: from March 2014 until new communication
EMC▪TB PRODUCT WARRANTY: 12 months from delivery date. Damages caused by improper use, handling storage or transportation are excluded from the warranty. Costs for transportation are not included in warranty service.
EMC▪TB DELIVERY TIME: 30/60 days upon order confirmation. For special products, lead times will be defined upon request.

by TECHBOARD

TECHBOARD PCB Division, leader in Europe in the production of printed circuit boards.
Founded in 1979 and established in Modena.
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Website: www.techboard.it

TECHBOARD Security Division, **SYAC▪TB** designs and develops the DigiEye systems and video surveillance solutions. Founded in 1988 and established in the Trieste AREA SCIENCE.
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TECHBOARD Communications Division, **EMC▪TB** designs and develops base stations and radio terminals for fixed and mobile use. Founded in 1973 and established in Modena.
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Website: www.emc-spa.com

GENERAL CONDITIONS OF SALE

1. SCOPE OF APPLICATION

1.1 These general conditions of sale shall govern each and all supplies of the "EMC-TB" video surveillance products (hereinafter referred to as the "PRODUCTS"), unless otherwise agreed by the Parties.

2. ORDERS AND DELIVERIES OF THE PRODUCTS – CHARACTERISTICS OF THE PRODUCTS

2.1 The purchase orders of the PRODUCTS shall need to be placed and accepted as follows:

a) *order forms:* BUYER shall place the purchase orders by the dedicated forms, properly filled in and subscribed. Likewise, SELLER's acceptance shall be given by a dedicated form;

b) *sales representative:* BUYER's purchase orders may be forwarded to SELLER by SELLER's sales representative, who may follow the above procedure. In such case the purchase order form shall need to be subscribed by BUYER.

2.2 Irrespective of how the orders are placed and accepted, all orders shall be binding on SELLER only if specially accepted by SELLER, and SELLER shall always be entitled to accept or reject any orders at its sole discretion.

2.3 SELLER shall, upon confirming an order, recap the relevant details (features of the PRODUCTS, delivery dates, payment, etc.). In the event of any discrepancy between the purchase order placed by BUYER and SELLER's acceptance, the latter shall prevail.

2.4 The PRODUCTS shall be delivered by SELLER to BUYER Ex-Works SELLER's premises in Modena (Italy), via della Scienza n. 50, within the term and using the package provided under the order confirmation. SELLER shall not be liable for any loss or damage to the PRODUCTS after delivery thereof. Partial or batch deliveries shall be admitted.

2.5 SELLER shall not be liable to BUYER in the event of delay not exceeding 10 (ten) business days from delivery of the PRODUCTS, irrespective of the reasons for the delay.

2.6 Any information relating to technical features and/or specifications of the PRODUCTS contained in dépliants, price lists, catalogues and other documents shall be binding only to the extent they are expressly agreed by the Parties.

2.7 SELLER shall be entitled not to perform the order related to the PRODUCTS in case that BUYER fails to provide with the information data which are deemed to be necessary for realizing such order.

2.8 SELLER may make any change to the PRODUCTS which appear to be necessary or suitable for the manufacture of the PRODUCTS and shall not be required to give any prior notice to BUYER .

3. PRICES AND PAYMENT

3.1 Unless otherwise agreed, the prices of the PRODUCTS shall be those quoted in SELLER's order confirmation and shall be considered Ex Works prices; any additional, packing or other costs shall be separately charged to BUYER.

3.2 BUYER shall pay SELLER for the PRODUCTS prior to the delivery thereof or within the term as may be provided for under the order confirmation.

3.3 In case that the Parties have agreed the payment of the PRODUCTS by documentary credit, the BUYER, unless otherwise agreed, shall take the necessary steps in order to have an irrevocable documentary credit, to be issued in accordance with the International Chamber of Commerce of Paris – ICC Uniform Customs and Practice for Documentary Credits (Publication no. 600), notified to the SELLER at least 30 (thirty) business days before the agreed date of delivery; unless otherwise agreed, the documentary credit shall be confirmed by an Italian bank agreeable to the SELLER and will be payable for sight.

3.4 In the event payment is due after delivery of the PRODUCTS through first demand bank guarantee, such guarantee shall need to be:

a) in a form acceptable to SELLER, and SELLER shall be entitled to require that the guarantee complies with, and is subject to, the relevant International Chamber of Commerce of Paris – ICC publications (including UCP600, ISP98, URDG758) whichever selected by SELLER upon approving the draft guarantee;

b) confirmed by SELLER's bank. A guarantee previously accepted by SELLER but not confirmed by its bank shall need to be re-issued or replaced.

3.5 In case of BUYER's delay in any payment, interests shall accrue at the rate provided under Italian law in the matter of commercial transactions. Besides, SELLER shall not be required to perform its obligations until full payment is collected with BUYER.

4. RETENTION OF TITLE

4.1 SELLER retains title on the PRODUCTS delivered to BUYER until full payment of the price thereof is collected by SELLER.

4.2 In case of infringement of BUYER's obligations provided herein, SELLER shall be entitled to cancel forthwith any outstanding supply of the PRODUCTS.

5. WARRANTY

5.1 The delivered PRODUCTS shall be SELLER's standard production and shall not need to conform to any special requirements or specifications other than as specially agreed in writing. The same shall apply to labelling, packing and packaging materials and any ancillary items. It shall be BUYER's responsibility to comply with legal or other requirements concerning the PRODUCTS applicable in connection with the sale, use or processing the PRODUCTS, including in the matter of import and safety. Under no circumstances shall implied or unstated specifications, nor requirements be binding on SELLER unless otherwise agreed in writing by the Parties.

5.2 SELLER warrants to BUYER that the PRODUCTS are free from manufacturing defects and fully comply with the technical specifications provided by BUYER and expressly agreed in writing by SELLER.

5.3 The warranty given by SELLER shall expire after 24 (twenty-four) months from the delivery of the PRODUCTS and be limited to defects of the PRODUCTS for which SELLER is accountable; no warranty shall be given in case of:

a) the PRODUCTS having been tampered with, modified or altered by BUYER or third parties;

b) any damage or defect of the PRODUCTS deriving from any mistreat, misuse, mishandle, negligence, whether by BUYER or third parties;

c) any other cause or event beyond SELLER's control and/or for which SELLER may not be accountable, such as, by way of example only, the PRODUCTS having been damaged after the transfer of the risk on the PRODUCTS to BUYER.

5.4 Any warranty rights or claims of BUYER shall be finally forfeited and void unless:

a) BUYER notifies SELLER in writing of any defects of the PRODUCTS within 10 (ten) days from delivery thereof, or from the discovery of the defects when it concerns defects which may not be detected or discovered upon delivery;

b) BUYER refrains from reselling the PRODUCTS claimed to be defective and complies with the instructions of SELLER concerning the warranty claims;

c) BUYER has first returned the PRODUCTS claimed to be defective to SELLER at its plant.

5.5 Within 5 (five) business days of receiving any PRODUCTS claimed to be defective, and subject to SELLER's examining and confirming the claimed defect or non-conformity, SELLER shall at its option decide whether to repair the involved PRODUCTS or replace them with technically comparable ones. Such repair or replacement shall be completed within 30 (thirty) days of SELLER's decision to repair or replace.

5.6 SELLER shall be entitled to recall the PRODUCTS or withdraw them from market, and the following shall apply:

a) all pending purchase orders, accepted or not by SELLER, for the concerned PRODUCTS shall be held or cancelled, as shall be advised by SELLER;

b) BUYER shall not resell nor market the concerned PRODUCTS;

c) the recall campaign shall be at SELLER's cost; BUYER shall co-operate under SELLER's direction and shall not charge SELLER any consideration nor fee;

d) the above warranty provisions shall apply.

5.7 In the event of any occurrence or claim out of product liability or any litigation or demand out of damages or injuries:
a) BUYER shall immediately and fully inform SELLER in writing and provide all documents and information relating thereto;
b) SELLER shall be entitled to retain exclusive right of action with respect to the claim or occurrence; if so required by SELLER, BUYER shall co-operate with SELLER under its directions;
c) BUYER shall not release any statements or admissions, enter into any compromise or settlement, disclose any information nor, generally, take any step whatsoever which may cause, determine or imply SELLER's liability or prejudice;
d) any indemnification or damages shall be payable by SELLER to BUYER only subject to BUYER having first fully complied with the provisions of these general conditions of sale.
5.8 Except in the event of SELLER's fraud or gross negligence, the sole rights, remedies and/or actions of BUYER with respect to the supplies of the PRODUCTS shall be those expressly provided herein.
5.9 In no event shall SELLER be liable to BUYER for consequential, incidental, special, punitive or exemplary damages, including but not limited to, reimbursement for loss of profits or revenues.

6. INSTALLATION

6.1 BUYER shall install the PRODUCTS at its cost, strictly following the instructions provided in the PRODUCTS' user manual.

7. TRADEMARK

7.1 BUYER acknowledges and agrees that SELLER is the exclusive owner of all rights in and relating to the "EMC-TB" trademark (hereinafter referred to as the "TRADEMARK"), and that these general conditions of sale shall not grant, nor transfer to BUYER any right nor interest in the TRADEMARK.
7.2 SELLER shall not use or exploit in any way the TRADEMARK, by means of promotional materials of any kind (including sites on the World Wide Web) or otherwise.

8. FORCE MAJEURE

8.1 Each Party shall be entitled to hold or cancel the performance of its obligations, if as a consequence of any event whatsoever beyond its control, or resulting from such things as, by way of example only, strike, boycott, lockout, fire, war or civil war, riot, embargo, inability to obtain fuel, power, raw materials. The concerned Party shall, if possible, promptly notify the other Party of the occurrence of the force majeure event and advise on the expected consequences.
8.2 The Party whishing to make use of the present clause must promptly communicate in writing to the other Party the occurrence and the end of such force majeure circumstances.
8.3 Should the suspension due to force majeure last more than 30 (thirty) business days, either Party shall have the right to terminate the contract by a 30 (thirty) days' written notice to the other Part.

9. EARLIER TERMINATION

9.1 Either Party shall be entitled to immediately terminate these general conditions of sale, as well as any contract of sale of the PRODUCTS, should the other Party be in material breach of this agreement.
9.2 In particular SELLER shall be entitled to terminate these general conditions of sale in the following cases:
a) in the event of BUYER being in default of its obligations to pay the PRODUCTS or to provide a bank guarantee, as provided under article no. 3;
b) in the event of BUYER becomes subject to insolvency or bankruptcy proceeding or liquidation proceeding, or its financial conditions reasonably indicate that BUYER will become insolvent.

10. APPLICABLE LAW - COMPETENT JURISDICTION - INCOTERMS

10.1 These general conditions of sale and the supplies of the PRODUCTS shall be governed by the Italian law. The United Nations Convention on contracts for International sale of goods shall be applied to the extent its provisions do not conflict with these general conditions of sale.
10.2 For the purpose of interpreting the terms of delivery or any other trade terms as may be employed by the Parties, reference is made to Incoterms of the International Chamber of Commerce of Paris – ICC, as they are in force at the time of each supply of the PRODUCTS.
10.3 The Court of Modena (Italy) shall have exclusive jurisdiction, including actions to obtain interim measures, seizures and any other precautionary measures, over any dispute arising out of or in connection with the validity, interpretation and performance of these general conditions of sale and of each supply of the PRODUCTS.
10.4 Notwithstanding the provision above, SELLER shall be entitled to bring any action against BUYER, including actions to obtain interim measures, seizures and any other precautionary measures, before the competent Court of the place where the BUYER has its place of business.

11. MISCELLANEOUS MATTERS

11.1 These general conditions of sale are the only agreement between the Parties for the sale of the PRODUCTS and may be amended exclusively by the written agreement of the Parties.
11.2 Should any provisions herein be or become invalid or unenforceable in whole or in part, the remaining provisions shall remain in full force and effect and the Parties shall in good faith negotiate and agree on an amendment, which secures that the legal and economic effects of the invalid or unenforceable provisions are preserved to the farthest extent possible.
11.3 The English text of these general conditions of sale, regardless of any translation in any other language, shall be the only authentic text for the purpose of the interpretation thereof.
11.4 SELLER shall at its discretion be entitled to reprint these general conditions of sale on the invoices, bills of lading or other documents relating to the supply of the PRODUCTS.
11.5 Should the SELLER fail to take any action or assert any right hereunder, no right or privilege of SELLER shall be waived nor voided

NOTES

CONTACT US

We believe in collaborative partnerships with our clients. Please contact us or connect with us, we are very interested in receiving your feedback.

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